



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/762,733	04/05/2001	Michael Benz	11270-166	8572

29177 7590 03/10/2005

BELL, BOYD & LLOYD, LLC  
P. O. BOX 1135  
CHICAGO, IL 60690-1135

EXAMINER

D AGOSTA, STEPHEN M

ART UNIT

PAPER NUMBER

2683

DATE MAILED: 03/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/762,733

Applicant(s)

BENZ ET AL.

Examiner

Stephen M. D'Agosta

Art Unit

2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 11-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                           |                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                                          | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                      | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/04</u> . | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 7-4-04 have been fully considered but they are not persuasive.

1. The examiner appreciates the re-mailing of the IDS. It has now been signed. The applicant's response regarding priority overcomes the examiner's objection.

2. The applicant argues that for claims 11 and 20 Yamada does not teach:

".....Evaluating a resultant history of the operating state to determine the operability of the observed radio channel. The cited section of Yamada allegedly teaching this feature (i.e., col. 3, 11. 31-41) does not, in fact, teach this element. Rather, this section, and the immediately preceding text in column 3 of Yamada, discloses a methodology used when searching channels with a cellular scanner (CS) and, in particular, repeatedly monitoring received strength indicators (RSSI) of channels in a cellular mobile telephone system (CMTS) with the CS. Since a voice channel of the CMTS is transmitted only during speech communication, there is a high possibility of non-detection. (See col. 3, 11. 36-38). Accordingly, the disclosed methodology proposes simply monitoring for a long period of time to ensure detection. This teaching fails, however, to teach or suggest an evaluation of the history of an actual operating state. Furthermore, this teaching does not teach or suggest determining an operability of the monitored channel based on the evaluated history of the operating state...."

The examiner disagrees. Firstly, the applicant is interpreting Yamada based on their statement that "there is a high possibility of non-detection". There is nothing in the claims that render Yamada's teachings as incorrect based on the columns/lines referenced by the examiner, hence the rejection is upheld.

As background, Yamada's invention is directed toward monitoring a use-status of a radio channel and selecting idle channels for allocation (C1, L38-51).

Art Unit: 2683

This clearly reads on the applicant's independent claims. The examiner relied on C2, L59-66, C3, L1-10 and C3, L33-41 to teach evaluating a resultant history of the operating state to determine operability since C2, L59-66 teaches "monitoring the use status of the channels of the CMTS at the location is installed in the MCS to search idling channels at the location". Taking this into account, a review of C3, L1-10 finds that Yamada searches for idle channels, and C3, L33-41 finds that one can search (eg. for a length of time) to detect which channel(s) are idle. Hence the examiner is not swayed since Yamada's teachings broadly read on the applicant's claims. Lastly, the concept of "monitoring for a length of time" (per steps 1-4, C3, L20-32 along with C3, L33-41) teaches monitoring and evaluating the data (eg. history) to determine what channels may be idle.

4. The previous rejection is included for information purposes only.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 11, 13-14, 16, 18-20** rejected under 35 U.S.C. 102(b) as being anticipated by Yamada et al. US 5,483,666 (hereafter Yamada).

As per **claim 11 and 20**, Yamada teaches a method for determining operability of at least one radio channel in a mobile radio communication system (title), the method comprising the steps of:

Observing at least one radio channel as an observed radio channel (C2, L59-66)

Art Unit: 2683

Establishing an operating state of the observed radio channel at least one of continuously in time and repeatedly over a number of successive frames (C3, L1-10 and L20-33)

Evaluating a resultant history of the operating state to determine the operability of the observed radio channel (C3, L33-41).

As per **claim 13**, Yamada teaches claim 11 further comprising determining a measured value characteristic of the operating state of the observed radio channel during the step of establishing the operating state (C3, L1-33 teaches measuring RSSI).

As per **claim 14**, Yamada teaches claim 13 comprising determining whether the measured value has one of reached, exceeded or undershot a predetermined limit value in a period of observation during the step of evaluating the resultant history (C3, L25-30 and/or C3, L41-46).

As per **claim 16**, Yamada teaches claim 11 further comprising:

Establishing the respective operating state of a plurality of observed radio channels (C3, L19-22)

Determining a correlation of a development of the operating state of at least some of the observed radio channels with time during the step of evaluating the resultant history (C3, L25-30).

As per **claim 18**, Yamada teaches claim 11 comprising the steps of:

Establishing repeatedly a measure of the operating state

Storing a corresponding value in a data field of a data memory for storing a development of the operating state with time (C3, L1-46).

Art Unit: 2683

As per **claim 19**, Yamada teaches claim 11 wherein the channels are physical channels of a TDMA/FDMA system (C1, L5-10 teaches cellular mobile telephone system which is interpreted as TDMA/FDMA) and the operating state of each available radio channel is one of known and established by observing the at least one observed radio channel (C3, L1-46).

As per **claim 20**, Yamada teaches a transmission station (figures 1, 3 and 7) for determining operability of at least one radio channel in a mobile radio communication system (title), the method comprising the steps of:

Observing at least one radio channel as an observed radio channel (C2, L59-66)

Establishing an operating state of the observed radio channel at least one of continuously in time and repeatedly over a number of successive frames (C3, L1-10 and L20-33)

Evaluating a resultant history of the operating state to determine the operability of the observed radio channel (C3, L33-41).

Also note that Yamada teaches receiving device/station(s) (figure 1 shows Mobile, #4, BTS #3 and MTSO #2), storage device for storing history values (figure 3, #38) and an evaluation device (Cellular Scanner, #7 which measures RSSI and determines channel operability, C3, L20-33. The fixed station connected to the Control Unit, #5 also operates similarly, C5, L41 to C7, L30).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 12 and 15** rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada as applied to claim 11 and further in view of Wang et al. US 5,471,671 (hereafter Wang).

As per **claim 12**, Yamada teaches claim 11 **but is silent on** further comprising determining a mean value of the operating state over a period of observation during the step of evaluating the resultant history.

Wang teaches a successful event on a channel has occurred (i.e., a call on the channel is finished successfully), the success event counter, N.sub.s, for that channel is incremented by one and the Margin for that channel is updated. Previous proposals for using a channel with a measured Margin use an instantaneous value for the Margin which is only updated when needed, i.e., at the call setup stage. The method of the present invention, though, updates the Margin after each successful completion of a call, thereby utilizing a more meaningful Margin based on the history of the channel. The Margin being updated after each successful call realizes a mean Margin value which advantageously improves the concept of Margin over the prior instantaneous margin measurement. Also, the margin value after a successful call is a truer measurement of channel Margin than the margin measured at call connection setup (C7, L26-42).

It would have been obvious to one skilled in the art at the time of the invention to modify Yamada, such that a mean value is used, to provide for an average value to be used which provides a more optimal (eg. smoother) value than an instantaneous number.

Art Unit: 2683

As per **claim 15**, Yamada teaches claim 13 **but is silent on** wherein wherein a short-time fluctuation of the measured value remains unconsidered in the step of evaluating the resultant history.

Wang teaches a successful event on a channel has occurred (i.e., a call on the channel is finished successfully), the success event counter, N.sub.s, for that channel is incremented by one and the Margin for that channel is updated. Previous proposals for using a channel with a measured Margin use an instantaneous value for the Margin which is only updated when needed, i.e., at the call setup stage. The method of the present invention, though, updates the Margin after each successful completion of a call, thereby utilizing a more meaningful Margin based on the history of the channel. The Margin being updated after each successful call realizes a mean Margin value which advantageously improves the concept of Margin over the prior instantaneous margin measurement. Also, the margin value after a successful call is a truer measurement of channel Margin than the margin measured at call connection setup (C7, L26-42).

The examiner notes that the use of a history (Yamada, C3, L33-41) and/or a mean/average value as taught by Wang would also lead one skilled in the art to NOT use short-term fluctuations since they will skew the data and hence should not be used.

It would have been obvious to one skilled in the art at the time of the invention to modify Yamada, such that short-term fluctuations are not used, to provide for using only longer-term data and not short-term fluctuations which can result in erroneous data being factored in (eg. if a rain storm occurs for an hour, that timeframe may have non-optimal RF communications and should not be considered).



Art Unit: 2683

**Claims 17** rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada and further in view of Sehier et al. US 5,548,618 (hereafter Sehier).

As per **claim 17**, Yamada teaches claim 16 wherein radio channels are physical channels of a TDMA system (C1, L5-10 teaches cellular mobile telephone system which is interpreted as TDMA) is established from the correlation of the development of observed radio channels of a same radio frequency with time (C3, L1-46) **but is silent on** a temporal drift of a radio channel.

Sehier teaches in tracking mode, the energy detection applies to the first N samples in the search window. This search window is opened approximately halfway through the timing recovery word RR to allow for temporal drift (C8, L38-48).

The examiner also notes, but does not cite, Massetti who teaches the central office has a clock that is regularly re-synchronized with a national time standard 90. In the U.S., for example, the clock 88 may be synchronized by the time signal which is broadcast by NIST over radio station WWVB. A clock 92 in the local home unit computer 82 may be, as is also known in the art, re-synchronized by use of the clock 88 in the central office 84 during each data collection telephone call between the central office 84 and the local home unit computer 82. Although it is known, as taught by Waechter et al in U.S. Pat. No. 4,943,963, to synchronize other portions of the in-home television tuning measurement system 10, such as the timing devices 50, 54, 58, 66, and 70 of the corresponding local code inserters 44, 46, 48, 62, and 64, and timing devices in the decoders 76, 78, and 78, to the clock 92 in the local home unit computer 82, it may be preferable to allow one or more of these other portions of the in-home television tuning measurement system 10 to run freely (i.e., without regular re-synchronization) and to use one of the clocks 88 and 92, which are regularly re-set, to track whatever temporal drift may occur in each such free running other portions (C10, L17-37).

Art Unit: 2683

It would have been obvious to one skilled in the art at the time of the invention to modify Yamada, such that temporal drift is used, to provide means to measure/monitor temporal drift and incorporate it into the channel operability history.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 703-306-5426. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stephen D'Agosta  
PRIMARY EXAMINER  
3-1-05

